G. TYPHOON SHIRLEY (291200Z JULY-060000Z AUGUST 1960)

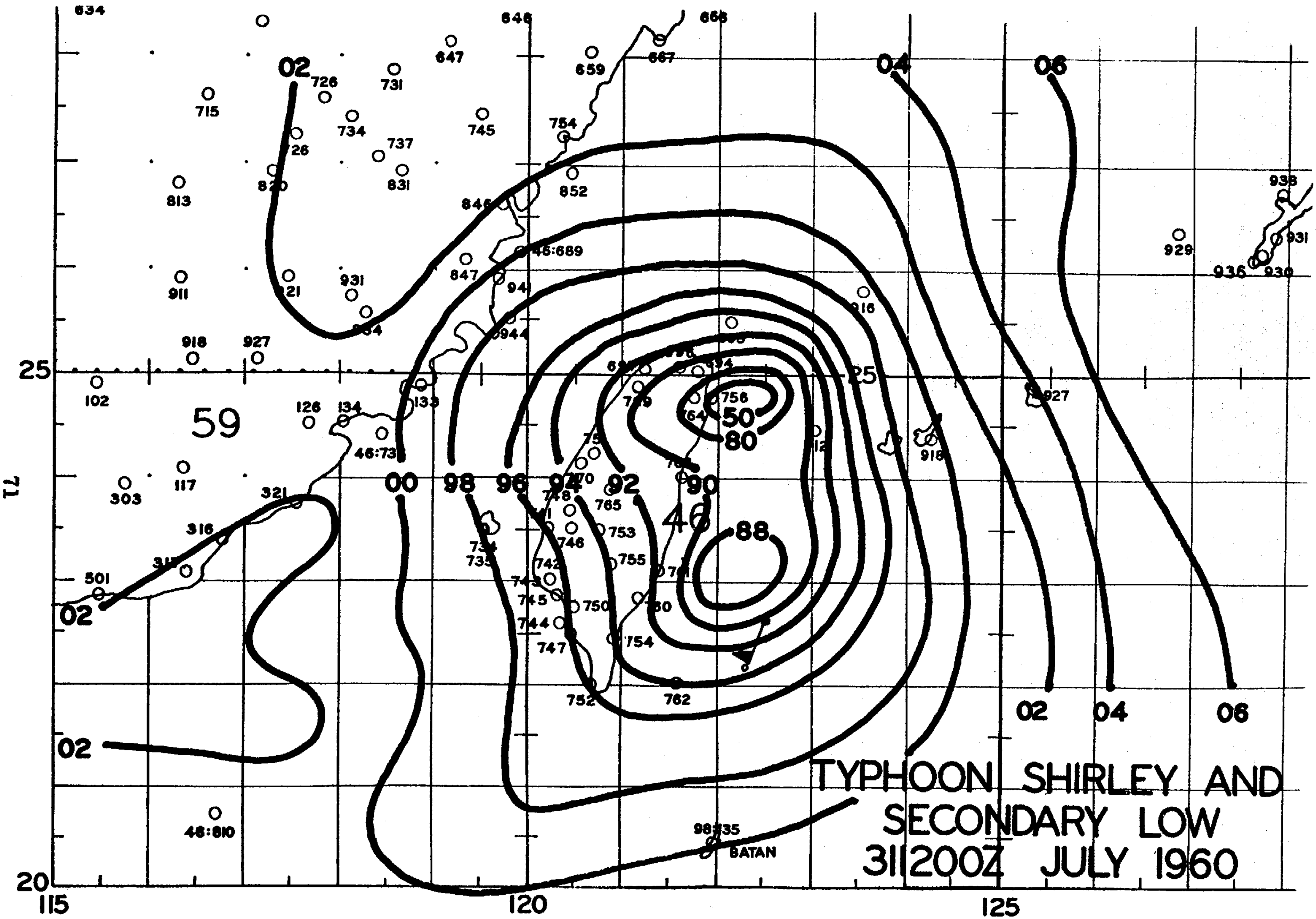
Typhoon SHIRLEY appeared to be waiting for POLLY to move off stage before beginning her performance. At 251200Z, when POLLY was about 1150 mi NW of Yap, a circulation rapidly developed near Yap and commenced a NW movement, essentially along a similar but more westerly track than POLLY had followed, traveling at 11 kts for the first 4 days. This circulation was lost for two days due to lack of data and was not detected again until 281200Z. At 290600Z the surface chart provided enough information to indicate that SHIRLEY had become a storm, although the intensity was unknown. The first warning was issued at 291200Z and the first typhoon warning was issued at 300600Z as SHIRLEY rapidly intensified and decelerated to a speed of 8 kts. By 301800Z, when the typhoon was 180 mi SE of the Taipei radio homing beacon, it had intensified to 135 kts. A trough was apparent at the S end of Taiwan on the 310600Z surface chart when SHIRLEY was 60 mi E of Taiwan and 85 mi SE of the Taipei homing beacon. As SHIRLEY approached Taipei, a low developed in the trough, intensified and moved NE from the S tip of Taiwan at 6 kts. Surface wind speeds were reported at 50 kts just SE of this low center. The secondary low dissipated rapidly after SHIRLEY passed over Taiwan. By 311800Z the typhoon was 16 mi W of the Taipei homing beacon, and the secondary low had virtually disappeared. The typhoon continued to weaken after departing Taiwan and was downgraded to a tropical storm at 011200Z, 12 mi inland of the Asiatic coastline. Warnings were discontinued at 021800Z and were commenced again at 041200Z when the storm was in the Yellow Sea. The last warning was issued at 060000Z when the storm was considered unlikely to create further damage.

The eye of Typhoon SHIRLEY was well defined and small. The minimum reported diameter was 7 mi, and the maximum 12 mi, and the most frequently reported diameter was 9 mi. Synoptically the situation associated with SHIRLEY was similar to the one associated with POLLY.

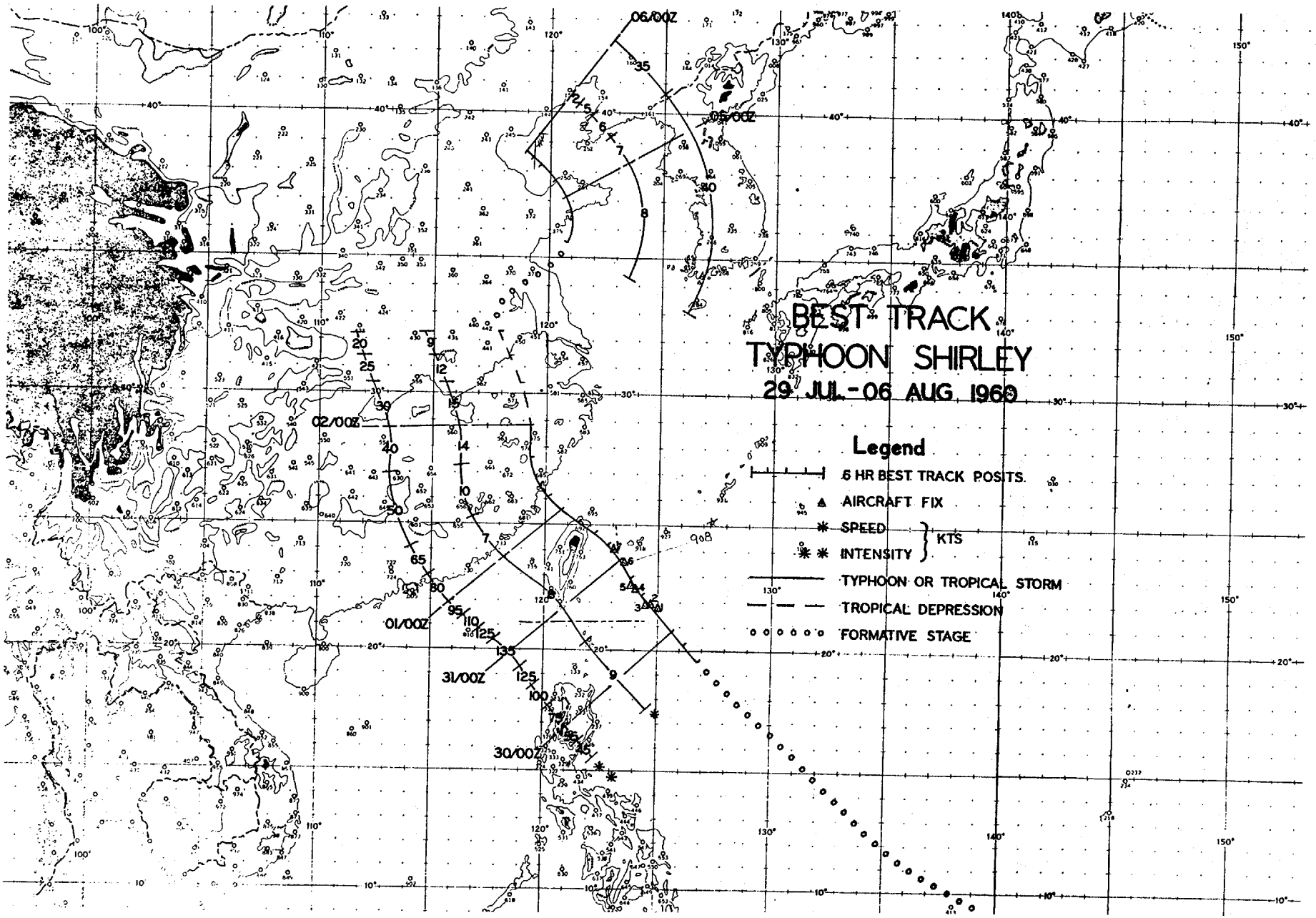
Typhoon SHIRLEY traveled 1400 mi over a period of 7 and one half days at an average speed of 8 kts or 189 mi per day. The minimum rate of movement was 2 kts on 5 August, and the maximum rate of movement was 15 kts on 2 August when SHIRLEY was over the Asiatic mainland.

The unusual feature of this typhoon was the formation of the secondary low while in the vicinity of Taiwan. (See the 311200Z July sectional chart herein) This effect occurs because of the modification of the strong winds associated with typhoons by the high terrain of the

Central Mountain Range. An excellent discussion entitled "The Problem of Typhoon Forecasting Over Taiwan and Its Vicinity" was presented at the 1960 U.S. - Asian Military Weather Symposium, 9-12 February 1960, by Lt. Colonel Hsu Ying-Chin, Chief, Weather Central, Chinese Air Force, and is available in the official summary published by 1st Weather Wing, USAF.



TYPHOON SHIRLEY AND SECONDARY LOW 311200Z JULY 1960


BEST TRACK
TYPHOON SHIRLEY
29 JUL - 06 AUG 1960
Legend
6 HR BEST TRACK POSITS.
AIRCRAFT FIX
SPEED
INTENSITY
KTS
TYPHOON OR TROPICAL STORM
TROPICAL DEPRESSION
FORMATIVE STAGE
06/00Z
05/00Z
02/00Z
01/00Z
31/00Z
30/00Z

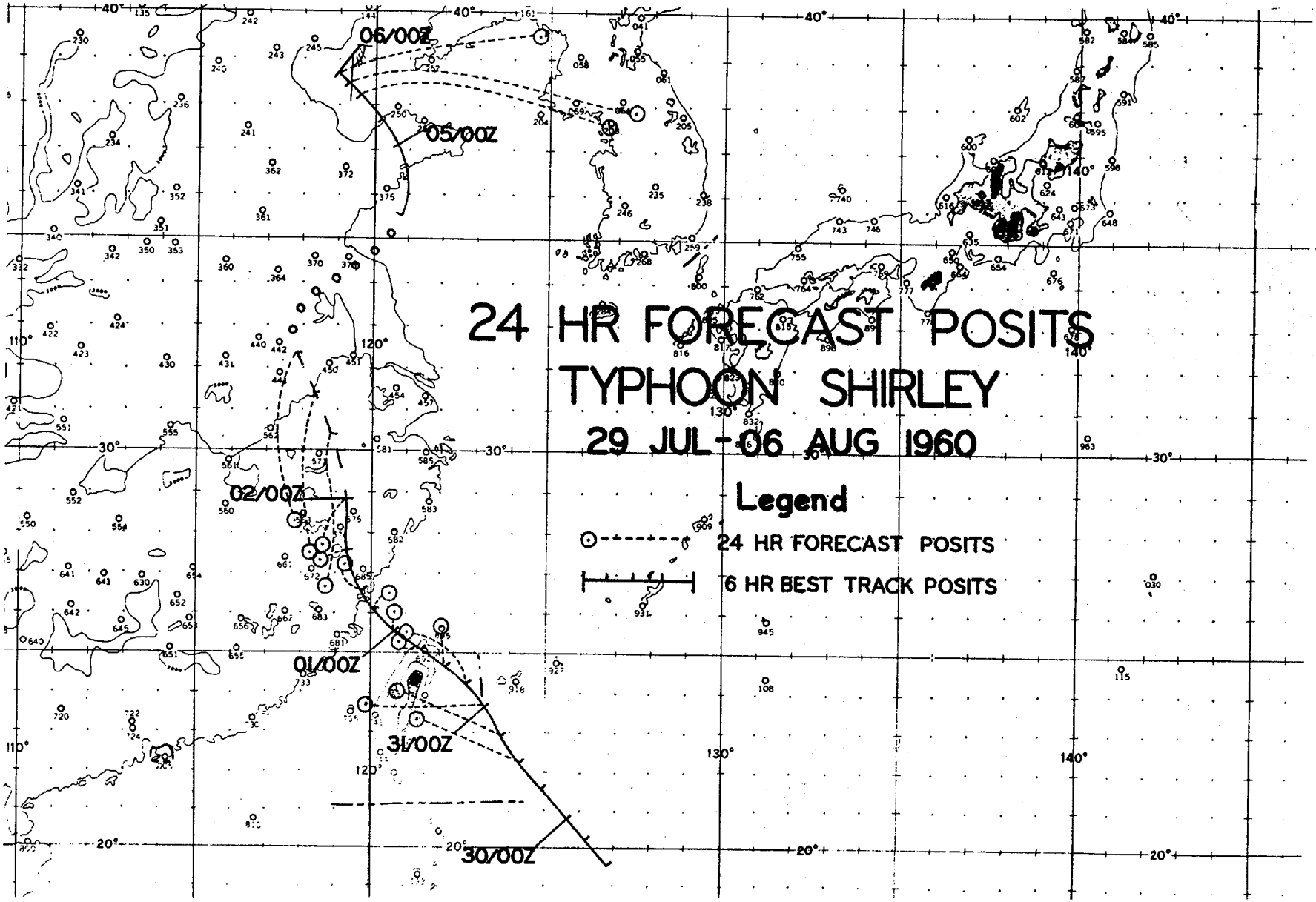
RECONNAISSANCE AIRCRAFT FIXES - TYPHOON SHIRLEY

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MIN SLP MBS	MAX SFC WND	MIN 700MB HGT	MAX 700MB WND	700MB TT/Td (°C)	EYE CHARACTERISTICS
1	300402Z	21.8N	125.0E	VW1-R-10	- -	- -	- -	- -	- - -	CIRC DIA 11 MI
2	300900Z	21.9N	124.8E	315-P-03	- -	85	7820	65	21/--	WELL DEFINED
3	301410Z	21.9N	124.7E	VW1-R-05	- -	- -	- -	- -	- - -	CIRC DIA 09MI WELL DEFINED
4	301500Z	22.5N	124.0E	VW1-R-10	- -	- -	- -	- -	- - -	CIRC DIA 09MI WELL DEFINED
5	301600Z	22.6N	123.9E	VW1-R-05	- -	- -	- -	- -	- - -	CIRC DIA 07MI WELL DEFINED
6	302323Z	23.5N	123.5E	315-P-05	- -	130	7510	100	20/--	CIRC DIA 10 MI
7	310250Z	24.1N	123.0E	315-P-10	- -	130	7560	105	20/--	CIRC DIA 12 MI OPEN S

TYPHOON SHIRLEY 29 JULY-06 AUGUST 1960
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION LAT.	LONG.	24 HR. ERROR DEG. DISTANCE	48 HR. ERROR DEG. DISTANCE
291200Z	19.6N	126.9E	- - - -	- - - -
291800Z	20.2N	126.2E	- - - -	- - - -
300000Z	20.8N	125.6E	- - - -	- - - -
300600Z	21.6N	125.0E	- - - -	- - - -
301200Z	22.2N	124.3E	292-188	- - - -
301800Z	22.8N	123.8E	291-186	- - - -
310000Z	23.6N	123.4E	271-195	- - - -
310600Z	24.2N	122.8E	308-138	- - - -
311200Z	24.7N	122.2E	354-68	334-425
311800Z	25.1N	121.4E	315-36	325-300
010000Z	25.5N	120.7E	360-33	310-289
010600Z	26.0N	120.1E	037-28	332-315
011200Z	26.6N	119.7E	330-65	011-166
011800Z	27.6N	119.3E	268-60	350-65
020000Z	28.9N	119.3E	206-96	212-52
020600Z	30.4N	118.9E	356-78	197-82
021200Z	31.4N	118.2E	140-18	179-43
021800Z	32.3N	117.9E	180-248	213-116
021800Z TO 041200Z NO WARNINGS ISSUED				
041200Z	35.6N	120.9E	- - - -	- - - -
041800Z	36.3N	121.0E	- - - -	- - - -
050000Z	37.1N	120.7E	- - - -	- - - -
050600Z	37.7N	120.2E	- - - -	- - - -
051200Z	38.2N	119.7E	- - - -	- - - -
051800Z	38.5N	119.2E	- - - -	- - - -
060000Z	38.6N	119.0E	- - - -	- - - -

AVERAGE 24 HOUR ERROR 103 MI
AVERAGE 48 HOUR ERROR 185 MI


24 HR FORECAST POSITS
TYPHOON SHIRLEY
29 JUL - 06 AUG 1960
Legend
24 HR FORECAST POSITS
6 HR BEST TRACK POSITS
06/00Z
05/00Z
02/00Z
01/00Z
31/00Z
30/00Z
40°
30°
20°
110°
120°
130°
140°